

held to the fire, burned Gloves and Garments at the distance of about three foot from the Fire.

Which were the particulars, the *R. Society* observed in these Glasses, and gave order to be Registered in their Books; encouraging the *Inventor* to proceed in this Work with all possible care and diligence, for enabling himself to instruct others in the way of Grinding these *Glasses* with facility.

The *Inventor* having declared his resolution to do so, added these Particulars. *First*, That the Lord Bishop of *Salisbury*, *Seth Ward* (who was then absent from the Meeting of the *Society*) had been by, when the *deeper* of his two Concaves turned a piece of Wood into flame in the space of *ten* seconds of time;

* *This the said judicious Prelate at another Meeting of the Royal Society, attested to be true.* and the *shallow*, in *five* seconds at most, in the season of *Autumn*, about *9* of the Clock in the Morning, the Weather gloomy*. *Secondly*, That the deeper Concave, when held to a lucid Body, would cast a

Light strong enough to read by at a considerable distance. *Thirdly*, That exposing the same to a Northern Window, on which the Sun shined not at all, or very little, he had perceived, that it would warm ones hand sensibly, by collecting the warm'd Air in the day-time, which it would not do after Sun-set.

An Account-

Of some Observations made by Mr. Samuel Colepreffe at and nigh Plimouth, An. 1667. by way of Answer to some of the Quæries concerning Tides, propos'd Numb. 17. and 18.

1. *O*ur *Diurnal* Tides, from about the latter end of *March* 'till the latter end of *September*, are about a foot higher (*perpendicular*, which is always to be understood) in the *Evening* than in the *Morning*, that is, in every Tide that happens after *12* in the day before *12* at night.

2. On the contrary, the *Morning* Tides from *Michaelmas* 'till our *Lady-day* in *March* again, are constantly higher by about a foot than those that happen in the *Evening*. And this proportion holds in *both*, after the gradual increase of the Tides *rising*

rising from the Neap to the highest Spring ; and the like decrease of its height 'till Neap again is deducted.

3. The highest *Menstrual Spring Tide* is always the third Tide after the *New or Full-Moon*, if a cross Wind do not keep the Water out, as the *North-east* or *North-west* usually doth ; whose contrary Winds, if strong, commonly make those to be High-Tides upon our Southern Coasts, which otherwise would be but low.

4. The highest *springs* make the lowest *Ebbs* : (though I am inform'd by an expert *Waterman*, that it sometimes happens, that there may be a very low Ebb, though no high Spring, which they term an *Out-let*, or *Gurges* of the Sea ; as when a great Storm chances off at Sea, and not on the Land.)

5. The Water neither *flows* nor *ebbs* alike, in respect of equal degrees ; but its Velocity increaseth with the Tide 'till just at Mid-water, that is, half flown, or at half Flood, at which time the Velocity is strongest, and so decreaseth proportionably 'till High-Water or Full-Sea. As may be guess'd at by the following *Scheme*, collected from my loose Papers, containing the Observations, as they were made at several times and places ; which I rather set down as a standing proportion of degrees in the *general*, than to adequate every single Flux or Reflux so exactly as to *half inches*, or the like ; but yet it may bear the odd minutes above six hours well enough. And it is farther to be noted, that although this be restrained to *Plymouth Haven*, or the like, where the Water usually riseth about 16 Foot (I say *usually*, because it may vary in this Port from the lowest Neap to the highest Annual Spring above 7 or 8 Foot) yet it may indifferently serve for other places, where it may rise as many *fathom*, or not so high, by a perpetual Addition or Subtraction.

The Scheme it self.

no.	foot.	inch.	no.	foot.	inch.
1	1	6	Of Flowing	1	1 . . . 6
2	2	6		2	2 . . . 6
3	4	0		3	4 . . . 0
4	4	0		4	4 . . . 0
5	2	6		5	2 . . . 6
6	1	6		6	1 . . . 6

6. The usual number of Tides, or times of High-water from New-Moon to New-Moon, or from Full-Moon to Full-Moon, is 59,

So far the Remarks hiterto made by this inquisitive person upon the Subject of Tides, who not only promiseth his own continuance for farther Observations, but also his care of recommending the said Tide-Quæries to the constant observation of an intelligent person living just on the Sea-side.

Enquiries and Directions.

For the Ant-Iles, or Caribbe-Islands.

In Numb. 23. some Quæries were publish'd for some parts of the West-Indies, and those for other parts reserv'd to another opportunity; which presenting it self at this time, we shall here set down such Enquiries for the Ant-Iles, as were collected out of the Relations of several Authors writing of those Islands, such as are the Natural History of the Ant-Iles, written by a French-man; the History of the Barbadoes by Lygon, &c. to the end, that these Quæries being considered by such curious persons as frequent those places, and delight in making careful Observations, they may from thence return such Answers, as may either confirm or rectifie the Relations concerning them already extant. The Enquiries are these:

I. Of Vegetables.

1. Whether the Juice of the Fruit of the Tree Junipa, being as clear as any Rock-water, yields a brown Violet-dye, and being put twice upon the same place, maketh it look